Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency

R-1 ITEM NOMENCLATURE

APPROPRIATION/BUDGET ACTIVITY
0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0603886C: Ballistic Missile Defense System Interceptor

DATE: February 2010

BA 4: Advanced Component Development & Prototypes (ACD&P)

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
WX13: Ballistic Missile Defense Interceptor Capability Development	293.969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	293.969
ZX40: Program-Wide Support	14.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	14.900

Note

NA

A. Mission Description and Budget Item Justification

The Kinetic Energy Interceptors (KEI) mission is to develop a mobile, multi-use (boost, ascent, midcourse) kinetic energy intercept capability to enhance the layered defense performance of the Ballistic Missile Defense System (BMDS). Kinetic Energy Interceptor's unique mobility and performance combination brings to the BMDS the capability to engage threats in the early, forward portion of the BMDS battle space. The interceptor design concept is compatible with land-mobile and sea-mobile operations and features a high performance booster designed to carry multiple payload types. The Kinetic Energy Interceptor's common booster will be capable of carrying Multiple Kill Vehicles (MKVs) and other advanced payloads to identify, seek out, and destroy lethal objects within a threat cluster in the future capability development block. With a multiple kill vehicle payload, more objects can be destroyed with one interceptor. This would save interceptor inventory, reduce infrastructure costs, and improve overall probability of engagement success for the BMDS. Kinetic Energy Interceptor's mobility, fast acceleration, and capability to close the fire control loop during the boost phase enable delivery of these payloads early in the midcourse timeline. Kinetic Energy Interceptor's ability to execute its suite of missions is enabled by a flexible fire control design that allows the interceptor to receive data from a diverse suite of ballistic missile defense sensors (land, sea, and space), fuse this information in real time, and execute an effective intercept. By adding a boost phase kinetic energy intercept layer and flexible ascent/midcourse capabilities to future BMDS capabilities, Kinetic Energy Interceptor enables the MDA to pace the threat, fill performance gaps, and increase BMDS effectiveness.

Concurrent with the release of the FY 2010 PB submission, the Agency terminated the Kinetic Energy Interceptor program.

The Kinetic Energy Interceptor Program Office is implementing a Program Termination Plan that focuses on an orderly program shutdown. This plan includes the identification of program deliverables and/or salvageable technologies that have value to other Government entities, as well as disposition of all manpower

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0603886C: Ballistic Missile Defense System Interceptor

BA 4: Advanced Component Development & Prototypes (ACD&P)

authorizations and personnel involved in the program. Finally, the plan addresses requirements for data and drawings storage, program documentation, and configuration management, and Kinetic Energy Interceptor program office files and records.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	385.493	0.000	0.000	0.000	0.000
Current President's Budget	308.869	0.000	0.000	0.000	0.000
Total Adjustments	-76.624	0.000	0.000	0.000	0.000
 Congressional General Reductions 		0.000			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	-20.000	0.000			
 Congressional Adds 		0.000			
 Congressional Directed Transfers 		0.000			
Reprogrammings	-7.628	0.000			
SBIR/STTR Transfer	-5.740	0.000			
 Other Adjustment Detail 	-43.256	0.000	0.000	0.000	0.000

Change Summary Explanation

FY 2009 decrease is the result of Mid-Year budget reductions, SBIR/STTR transfer, FY10 Appropriation language directed rescission of FY09 funds, and MDA reprogrammings.

No FY2011 data provided in PB10.

DATE: Echruary 2010

EXHIBIT K-ZA, KDT&E PTOJECT JU	Suncation. P	D 20 1 WIISS	ile Deletise i	Agency					DATE. FED	ruary 2010		
APPROPRIATION/BUDGET ACT 0400: Research, Development, Te BA 4: Advanced Component Deve	est & Evaluatio					TURE Missile Defe	ense		listic Missile I Development	FY 2015 Cost To		
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate		Total Cost	
WX13: Ballistic Missile Defense Interceptor Capability Development	293.969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	293.969	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			

Note

NA

A. Mission Description and Budget Item Justification

Exhibit D 24 DDT8 E Project Justification: DR 2011 Missile Defense Agency

The Kinetic Energy Interceptors (KEI) mission is to develop a mobile, multi-use (boost, ascent, midcourse) kinetic energy intercept capability to enhance the layered defense performance of the Ballistic Missile Defense System (BMDS). Kinetic Energy Interceptor's unique mobility and performance combination brings to the BMDS the capability to engage threats in the early, forward portion of the BMDS battle space. The interceptor design concept is compatible with land-mobile and sea-mobile operations and features a high performance booster designed to carry multiple payload types. The Kinetic Energy Interceptor common booster will be capable of carrying advanced payloads to identify, seek out, and destroy lethal objects within a threat cluster in the future capability development block. With a multiple kill vehicle payload, more objects can be destroyed with one interceptor. This would save interceptor inventory, reduce infrastructure costs, and improve overall probability of engagement success for the BMDS. Kinetic Energy Interceptor's mobility, fast acceleration, and capability to close the fire control loop during the boost phase enable delivery of these payloads early in the midcourse timeline. Kinetic Energy Interceptor's ability to execute its suite of missions is enabled by a flexible fire control design that allows the interceptor to receive data from a diverse suite of ballistic missile defense sensors (land, sea, and space), fuse this information in real time, and execute an effective intercept. By adding a boost phase kinetic energy intercept layer and flexible ascent/midcourse capabilities to future BMDS capabilities, Kinetic Energy Interceptor enables the MDA to pace the threat, fill performance gaps, and increase BMDS effectiveness.

Concurrent with the release of the FY 2010 PB submission, the Agency terminated the Kinetic Energy Interceptor program.

B. Accomplishments/Planned Program (\$ in Millions)

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency **DATE:** February 2010 APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE PROJECT** PE 0603886C: Ballistic Missile Defense WX13: Ballistic Missile Defense Interceptor 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) System Interceptor Capability Development B. Accomplishments/Planned Program (\$ in Millions) FY 2011 FY 2011 FY 2011 **FY 2009 FY 2010** Base OCO Total Termination and Closeout 61.160 0.000 0.000 0.000 0.000 See Description Below FY 2009 Accomplishments: Implemented program termination Identified program deliverables and/or salvageable technologies Implemented termination contracting activity Identified and archived drawings, program documentation and technical documentation Implemented schedule of proposed draw down of manpower authorization Dispositioned hardware assets

FY 2010 Plans:

NA

FY 2011 Base Plans:

NA

FY 2011 OCO Plans:

NA

| Interceptor | 173.705 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.00

FY 2009 Accomplishments:

Conducted one Stage 1 rocket motor static fire to validate performance

Completed final integration and testing of FTK-01 pathfinder vehicle and conducted pathfinding

activities at Vandenberg Air Force Base (VAFB) Completed 80% of avionics qualifications testing

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defens	se Agency			DATE: Febr	ruary 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603886C: Ballistic Missile Defe System Interceptor	ense		istic Missile L Development		rceptor
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Completed booster avionics assembly and delivered stage 1 and integration	2 booster flight motors to VAFB for					
FY 2010 Plans: NA						
FY 2011 Base Plans: NA						
FY 2011 OCO Plans: NA						
Element Engineering		39.286	0.000	0.000	0.000	0.000
See Description Below						
FY 2009 Accomplishments: Conducted Director's Assessment of ;Kinetic Energy Interceptor	;Utility to the BMDS					
FY 2010 Plans: NA						
FY 2011 Base Plans: NA						
FY 2011 OCO Plans: NA						
Test and Evaluation		2.996	0.000	0.000	0.000	0.000
See Description Below						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defens	e Agency			DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603886C: Ballistic Missile Defe System Interceptor	ense		istic Missile L Development		rceptor
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Delivered ;draft launch operation requirements document for FTK Executed simulated launch of pathfinder FY 2010 Plans:	-01 to VAFB					
NA FY 2011 Base Plans: NA						
FY 2011 OCO Plans: NA						
Systems Engineering and Program Management		16.822	0.000	0.000	0.000	0.000
See Description Below						
FY 2009 Accomplishments: Provided management, leadership, and planning for all activities to Provided salaries, travel, and project-wide support, to include sect Provided Quality, Safety, and Mission Assurance (QSMA) operational Agency requirements for design, test, manufacturing, quality, safety 2010 Plans:	urity ons to ensure compliance with					
NA						
FY 2011 Base Plans: NA						

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Exhibit R-2A, RDT&E Project Justi	ification: PE	3 2011 Missi	le Defense /	Agency					DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIV 0400: Research, Development, Test BA 4: Advanced Component Develo	& Evaluation	•				TURE Missile Defer	ıse		istic Missile L Development		erceptor
B. Accomplishments/Planned Pro-	gram (\$ in N	/lillions)		'							
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: NA											
			Accomplis	hments/Plani	ned Progran	ns Subtotals	293.969	0.000	0.000	0.000	0.00
C. Other Program Funding Summa	ary (\$ in Mil	lions)									
			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>		<u>Total</u>	FY 2012	FY 2013	FY 2014		Complete	
0603175C: Ballistic Missile	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.76
Defense Technology											
0603881C: Ballistic Missile	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.31
Defense Terminal Defense											
Segment	4 470 000	4 007 074	4 0 4 0 4 0 4	0.000	4 0 40 404	4 440 055	4 004 700	4 000 000	4 000 040		0 000 00
0603882C: Ballistic Missile Peterse Mid Course Segment	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.92
Defense Mid-Course Segment • 0603883C: Ballistic Missile	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.68
Defense Boost Defense Segment	304.303	102.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	U	300.00
• 0603884C: Ballistic Missile	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.48
Defense Sensors	002.701	021.017	101.000	0.000	101.000	100.000	001.007	000.020	010.012	Ū	1,170.10
0603888C: Ballistic Missile	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.57
Defense Test and Targets			,		,	,					,
0603890C: Ballistic Missile	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.38
Defense Enabling Programs											
• 0603891C: SPECIAL	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.85
PROGRAMS - MDA											
• 0603892C: <i>BMD AEGIS</i>	1,054.323	,	1,467.278	0.000	1,467.278	,	1,112.668		923.316	0	8,091.91
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.63

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Exhibit R-2A, RDT&E Project Justi	fication: PB	2011 Missil	e Defense	Agency					DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVI 0400: Research, Development, Test BA 4: Advanced Component Develop	& Evaluation			R-1 ITEM NO PE 0603886 System Inter	PROJECT WX13: Ballistic Missile Defense Interceptor Capability Development						
C. Other Program Funding Summa	ry (\$ in Milli	ions)									
	,	-	FY 2011	FY 2011	FY 2011					Cost To	
Line Item	FY 2009	FY 2010	<u>Base</u>	<u>000</u>	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cos
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.02
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.56
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.22°
0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.55
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.28
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.72
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.010
• 0603913C: ISRAELI COOPERATIVE	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.54
• 0604880C: <i>LAND-BASED SM-3</i>	0.000 0.000	0.000 255.987	281.378 318.800	0.000 0.000	281.378 318.800	345.937 405.500	187.062 416.300	93.456 337.300	139.595 227.500	0 0	1,047.428 1,961.387

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency	DATE: February 2010
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APPROPRIATION/BUDGET ACTIVITY R

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense System Interceptor **PROJECT**

WX13: Ballistic Missile Defense Interceptor Capability Development

C. Other Program Funding Summary (\$ in Millions)

<u> </u>	. , (+	<u></u>	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	oco	Total	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• 0604881C: Aegis SM-3 BLOCK											
IIA CO-DEVELOPMENT											
• 0604883C: <i>PRECISION</i>	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
TRACKING SPACE SYSTEM											
• 0604884C: <i>AIRBORNE</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
INFRARED (ABIR)											
0605502C: Small Business	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
Innovative Research BMDO											
0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
Headquarters-MDA											

D. Acquisition Strategy

The Kinetic Energy Interceptors (KEI) development and test acquisition strategy focused on developing gap-filling, multi-use kinetic energy capabilities for strategically deployable land-mobile and sea-mobile platforms. The Kinetic Energy Interceptor element is being developed under a single prime contractor selected competitively at the start of development. The revised acquisition strategy for Kinetic Energy Interceptor is for payloads to be budgeted and developed under other BMDS elements that deliver each payload for integration into the Kinetic Energy Interceptor element.

In FY 2009 the Kinetic Energy Interceptor Program Office implemented a Program Termination Plan. This plan included all activities required for close-out. The Program Office conducted Termination activities under the Termination Contracting Officers (TCO) direction.

E. Performance Metrics

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY R-1

0400: Research, Development, Test & Evaluation, Defense-Wide

BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

DATE: February 2010

Capability Development

Product Development (\$ in Millions)

				FY 2	2010	FY 2 Bas		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date C	ost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Termination and Closeout Termination & Closeout WX13	Various/ Various	Northrup Grumman Huntsville, AL	54.800	0.000		0.000		0.000		0.000	0	54.800	54.800
Termination and Closeout Hardware Disposition WX13	TBD/TBD	AMCOM - Eglin Air Force Base, FL Edwards Air Force Base, CA	6.360	0.000		0.000		0.000		0.000	0	6.360	6.360
Interceptor Interceptor WX13	C/CPAF	Northrop Grumman - VA, AL, CA, PA Raytheon & Orbital - AZ, ATK- MD, UT	173.705	0.000		0.000		0.000		0.000	0	173.705	173.705
Element Engineering Contractor Element Engineering WX13	C/CPAF	Northrop Grumman - VA, AL, CA, PA Raytheon & Orbital - AZ, ATK- MD, UT	39.286	0.000		0.000		0.000		0.000	0	39.286	39.286
Element Engineering Contractor Kinetic Energy Interceptor BMDS KV Engineering and Development WX13	C/CPFF	Northrop Grumman - VA, AL Raytheon, AZ	0.000	0.000		0.000		0.000		0.000	0	0	0
Systems Engineering and Program Management	Various/ Various	Missile Defense Agency Huntsville, AL	0.000	0.000		0.000		0.000		0.000	0	0	0

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY R-1 I

0400: Research, Development, Test & Evaluation, Defense-Wide

BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

DATE: February 2010

Capability Development

Product Development (\$ in Millions)

				FY 2	2010	FY 2 Ba	2011 se	FY 20 OC		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Furnished Equipment WX13													
Systems Engineering and Program Management CG(X) Sea-Based Modular Launcher WX13	C/CPAF	Northrop Grumman Fairfax, VA; Sunnyvale, CA	0.000	0.000		0.000		0.000		0.000	0	0	0
		Subtotal	274.151	0.000		0.000		0.000		0.000	0.000	274.151	274.151

Remarks

NA

Support (\$ in Millions)

				FY 20	010	FY 2 Ba		FY 2 OC		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering and Program Management SETA WX13	C/FFP	MEI Huntsville, AL	12.883	0.000		0.000		0.000		0.000	0	12.883	12.883
Systems Engineering and Program Management Other	TBD/TBD	SMDC/Tybrin, Navy ICP-PA DCMA - Fairfax, VA	0.146	0.000		0.000		0.000		0.000	0	0.146	0.146

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R-1 Line Item #80 Page 11 of 22

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY R-1

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

DATE: February 2010

Capability Development

Support (\$ in Millions)

				FY 2010		FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Agencies WX13													
Systems Engineering and Program Management Security Support WX13	TBD/TBD	DISA Colorado Springs, CO	0.000	0.000		0.000		0.000		0.000	0	0	0
Systems Engineering and Program Management BMDS Interfaces, BMDS SIM WX13	TBD/TBD	Various/JRDC/ MDA/System Engineering	0.000	0.000		0.000		0.000		0.000	0	0	0
	Subtotal 13.029					0.000		0.000		0.000	0.000	13.029	13.029

Remarks

NA

Test and Evaluation (\$ in Millions)

				FY 2	2010	FY 2		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation National Environmental Protection Agency (NEPA) WX13	TBD/TBD	SMDC Huntsville, AL	0.177	0.000		0.000		0.000		0.000	0	0.177	0.177

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R-1 Line Item #80 Page 12 of 22

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

R-1 I

0400: Research, Development, Test & Evaluation, Defense-Wide

BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

DATE: February 2010

Capability Development

Test and Evaluation (\$ in Millions)

				FY 2010		FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Range Support WX13	TBD/TBD	VAFB CA	0.762	0.000		0.000		0.000		0.000	0	0.762	0.762
Test and Evaluation TEDAC and TM Ops for FTK-01 and FTK-02 WX13	TBD/TBD	SMDC/Gray Research Huntsville, AL	0.002	0.000		0.000		0.000		0.000	0	0.002	0.002
Test and Evaluation Stage 1 & 2 Separation Analysis WX13	C/FFP	AMCOM/Craft Tech/Calspan Pipersville, PA/ Buffalo, NY	2.055	0.000		0.000		0.000		0.000	0	2.055	2.055
Test and Evaluation NASA Wallops - Flight Experiment Support WX13	TBD/TBD	Wallops Flight Facility VA	0.000	0.000		0.000		0.000		0.000	0	0	0
		Subtotal	2.996	0.000		0.000		0.000		0.000	0.000	2.996	2.996

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

DATE: February 2010

Capability Development

Management Services (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering and Program Management Civilian Salaries and Travel WX13	TBD/TBD	Missile Defense Agency Huntsville, AL	2.817	0.000		0.000		0.000		0.000	0	2.817	2.817
Systems Engineering and Program Management Engineering Program Support WX13	C/FFP	COLSA Corp, Huntsville, AL AMRDEC, Huntsville, AL	0.976	0.000		0.000		0.000		0.000	0	0.976	0.976
		Subtotal	3.793	0.000		0.000		0.000		0.000	0.000	3.793	3.793

Remarks

NA

	Total Prior Years Cost	FY:	2010	FY 2 Bas	-	FY 2	-	2011 otal	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	293.969	0.000		0.000		0.000		0.000	0.000	293.969	293.969

Remarks

R-1 ITEM NOMENCLATURE

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

PE 0603886C: Ballistic Missile Defense System Interceptor PROJECT

WX13: Ballistic Missile Defense Interceptor

Capability Development

	F	Y 2	200	9	F	Υ 2	201	0	F	Y 2	201	1	F	Y 2	201	2	F	Y 2	201	3	F	Y 2	201	4	F	Υ 2	201	5
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Stage 1 Rocket Motor Static Fire Three																												

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603886C: Ballistic Missile Defense WX13:

System Interceptor

PROJECT

WX13: Ballistic Missile Defense Interceptor

Capability Development

Schedule Details

	Start		Er	nd
Event	Quarter	Year	Quarter	Year
Stage 1 Rocket Motor Static Fire Three	1	2009	1	2009

DATE: February 2010

		2 20 1 1 111100	20.0	·gooy							
0400: Research, Development, Tes	APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)						nse	PROJECT ZX40: Prog	ram-Wide Si	upport	
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
ZX40: Program-Wide Support	14.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	14.900
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A. Mission Description and Budget Item Justification

Exhibit R-2A RDT&E Project Justification: PB 2011 Missile Defense Agency

Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Civilian Salaries and Support	14.900	0.000	0.000	0.000	0.000
See Description Below					
FY 2009 Accomplishments: See Section A: Mission Description and Budget Item Justification					
FY 2010 Plans: NA					
FY 2011 Base Plans: NA					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense	Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) PE 0603886C: Ballistic Missile Defense

System Interceptor

ZX40: Program-Wide Support

B. Accomplishments/Planned Program (\$ in Millions)

		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: NA						
	Accomplishments/Planned Programs Subtotals	14.900	0.000	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

			FY 2011	FY 2011	FY 2011					Cost To		
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	<u>oco</u>	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost	
0603175C: Ballistic Missile	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769	
Defense Technology												
0603881C: Ballistic Missile	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314	
Defense Terminal Defense												
Segment												
0603882C: Ballistic Missile	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	0	8,382.922	
Defense Mid-Course Segment										_		
0603883C: Ballistic Missile	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682	
Defense Boost Defense Segment	000 754	004 047	454.050	0.000	454.050	100 500	004 007	050 505	040.040		4 470 400	
0603884C: Ballistic Missile	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483	
Defense Sensors	000 050	000 000	4 440 405	0.000	4 440 405	4 405 050	054 074	074 000	000 000	0	0 000 577	
0603888C: Ballistic Missile Personal Torrects	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577	
Defense Test and Targets	402.776	250 751	400 760	0.000	400.760	460 672	157 715	172 071	488.799	0	2.052.204	
0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	400.799	0	3,053.384	
• 0603891C: SPECIAL	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858	
PROGRAMS - MDA	102.990	230.103	270.109	0.000	270.109	209.040	450.045	317.400	001.515	U	2,341.030	
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919	
• 0603893C: SPACE TRACKING &	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631	
SURVEILLANCE SYSTEM	200.001	101.000	112.070	0.000	112.070	33.530	00.∓ ∠ ∓	02.020	04.001	O	720.001	
00.112.22102.07072.07												

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency

0.000

0.000

0.000

255.987

281.378

318.800

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide

R-1 ITEM NOMENCLATURE
PE 0603886C: Ballistic Missile Defense

PROJECT

BA 4: Advanced Component Development & Prototypes (ACD&P)

C. Other Program Funding Summary (\$ in Millions)

System Interceptor

ZX40: Program-Wide Support

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To	Total Cost
• 0603894C: MULTIPLE KILL	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
VEHICLE	220.02.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	J	220.02.
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: ISRAELI	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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281.378

318.800

345.937

405.500

187.062

416.300

93.456

337.300

139.595

227.500

0 1,047.428

0 1,961.387

0.000

0.000

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COOPERATIVE

• 0604880C: LAND-BASED SM-3

R-1 ITEM NOMENCLATURE

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P) PE 0603886C: Ballistic Missile Defense

PROJECT

System Interceptor

ZX40: Program-Wide Support

C. Other Program Funding Summary (\$ in Millions)

	•	-	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• 0604881C: Aegis SM-3 BLOCK											
IIA CO-DEVELOPMENT											
• 0604883C: PRECISION	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
TRACKING SPACE SYSTEM											
• 0604884C: <i>AIRBORNE</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
INFRARED (ABIR)											
0605502C: Small Business	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
Innovative Research BMDO											
0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
Headquarters-MDA											

D. Acquisition Strategy

NA

E. Performance Metrics

R-1 ITEM NOMENCLATURE

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0603886C: Ballistic Missile Defense

PROJECT

ZX40: Program-Wide Support

BA 4: Advanced Component Development & Prototypes (ACD&P)

System Interceptor

Product Development (\$ in Millions)

		FY 2011 FY 2010 Base		FY 2011 OCO		FY 2011 Total							
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.000		0.000		0.000		0.000			

Remarks

NA

Support (\$ in Millions)

Capport (\$ 111 million	10)													
				FY 2	2010	FY 2 Ba		FY 2	2011 CO	FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
		Subtotal	0.000	0.000		0.000		0.000		0.000				

Remarks

NA

Test and Evaluation (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.000		0.000		0.000		0.000			

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R-1 ITEM NOMENCLATURE

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide

PE 0603886C: Ballistic Missile Defense

PROJECT

ZX40: Program-Wide Support

BA 4: Advanced Component Development & Prototypes (ACD&P)

System Interceptor

Test and Evaluation (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

NA

Management Services (\$ in Millions)

		•• (•	,											
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
	Cost Category Item		•	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
			Subtotal	0.000	0.000		0.000		0.000		0.000			

Remarks

NA

	Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011	Cost To	Total Cost	Target Value of Contract
	rears Cost	F1 2010	Dase	000	IOLAI	Complete	TOTAL COST	Contract
Project Cost Totals	0.000	0.000	0.000	0.000	0.000			

Remarks